

## **Final Project Lesson Plans**

### **Student Goals:**

- To engage in using the knowledge and understanding you acquired during the unit in a novel way
- To demonstrate the mastery of / improve on your understanding of the overarching understanding goal of the unit: Understand how to knowledgeably analyze a body of water and explain your research findings
- To work independently and creatively and to guide your own project
- To gain experience organizing and managing your own science research project
- To learn from your own mistakes and to continuously improve on your work
- To work closely with the other members of your group
- The project should culminate in a product that is tangible and can be displayed

### **Time needed:**

We suggest allowing 2 full weeks (10 lessons) for the final project, with 1 lesson for the project introduction, 1 for conferences on student proposals, 4 for lab analysis of water samples, 2 for poster work, and 2 for the final presentations. The goals and logistics of the final project should be introduced before the field trip, and the guidelines for the proposals clearly explained. This would give the groups a full week to survey their site, conduct some background research, and write their proposals.

### **Final Project Preparation:**

The lab needs to always be set up with 2-3 stations for each water quality test. Make sure that you have a cooler with ice available for the students to store their samples. Also let the students know in advance that they will need to get a poster board for this project.

### **The Final Project**

Final Project structure and logistics are explained in the *Final Project Guidelines*. The assessment is explained in *Final Project Grading*.

### **Final Project Comments and Suggestions**

The work that the students accomplished on their projects, posters, and presentations exceeded our expectations. Most students were very engaged and enthusiastic and invested a great deal of effort into this project. From what we saw on the posters and heard in the presentations, the students' understanding of water quality and its importance had deepened considerably. We think that this project works well as a culminating performance for the unit.

We found that the most challenging element of this project for the students (and the one that they could improve the most on) was the critical analysis of their results. We thus feel that it would be worthwhile to emphasize the importance of understanding WHY the

results come out a certain way in the project introduction, and asking the students challenging questions about their surveys and predictions during the conferences. We would also recommend holding a second conference session after all the results are analyzed; possibly with students conferencing with each other as well as with the teacher. Peer evaluation of posters and presentations is another possible addition.

**Final Project Materials and Handouts:**

• *Final Project Guidelines*

<http://learnweb.harvard.edu/ent/gallery/pop4/FinalProjectGuidelines.pdf>

• *Final Project Grading*

<http://learnweb.harvard.edu/ent/gallery/pop4/FinalProjectGrading.pdf>